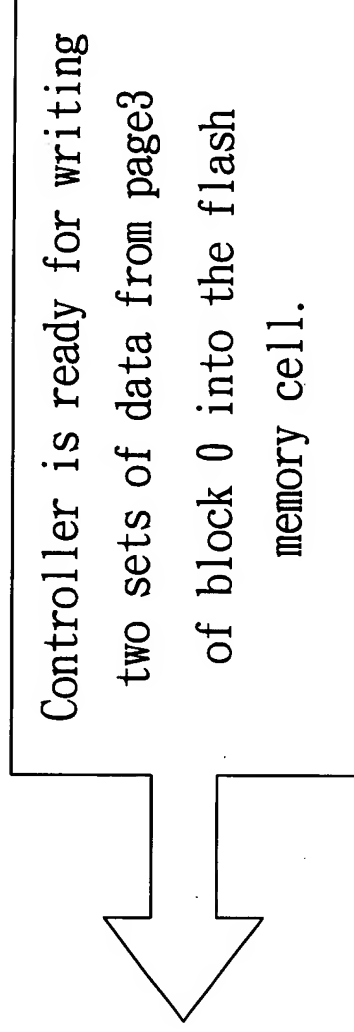


Block 0

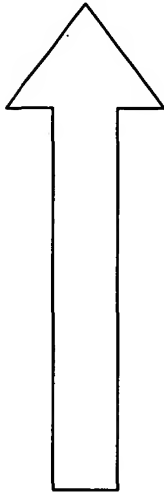
Page0
Page1
Page2
Page3
Page4
• • •
PageN-1
PageN



PRIOR ART
FIG. 1A

Block 0(old block)

Page0
Page1
Page2
Page3
Page4
•
PageN-1
PageN

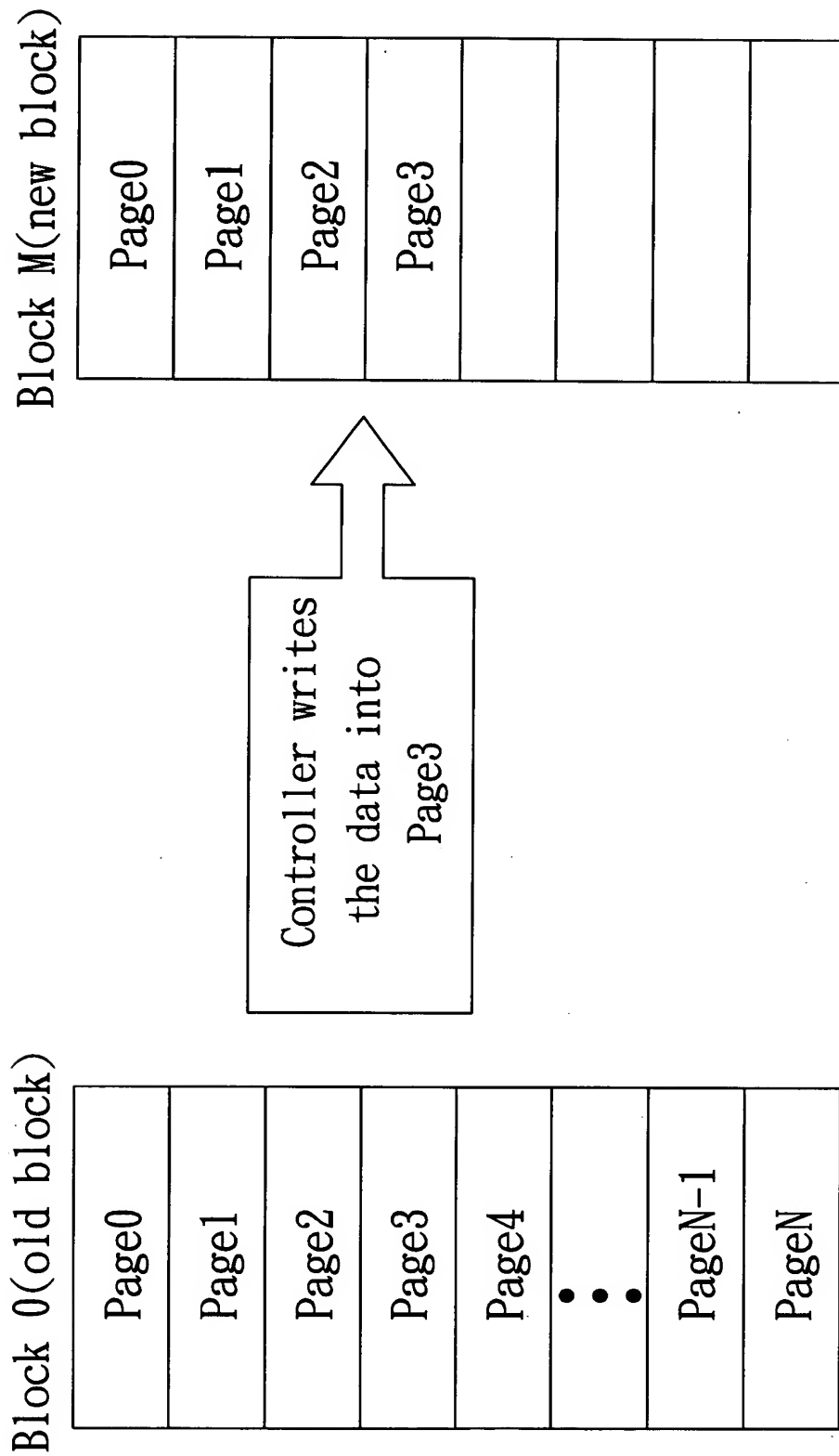


The conventional controller selects one new block, the data in page3 is transferred from the corresponding page from the old block to the new block.

Block M(new block)

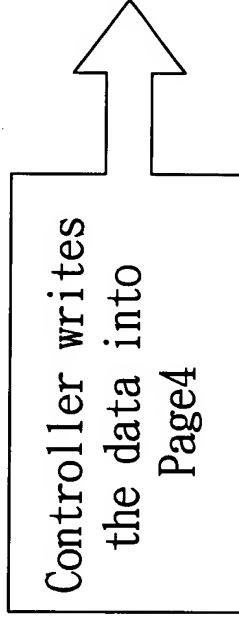
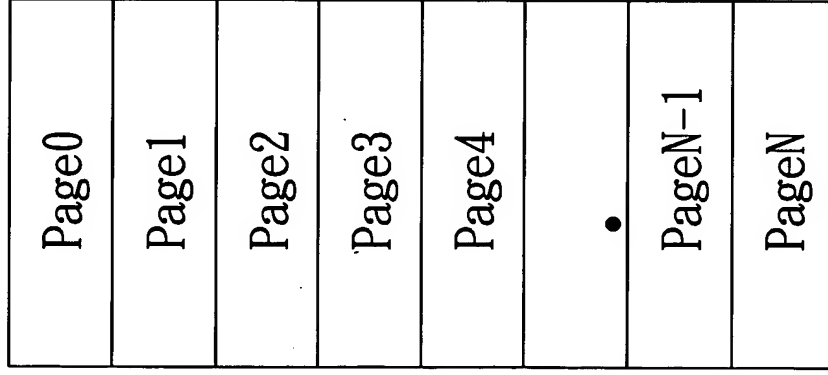
Page0
Page1
Page2

PRIOR ART
FIG. 1B

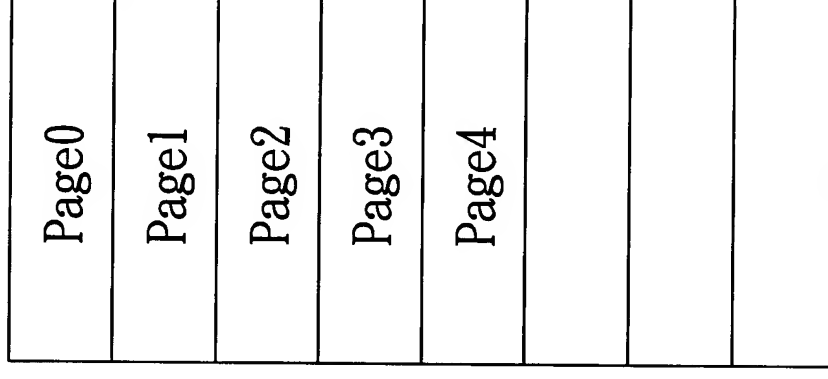


PRIOR ART
FIG. 1C

Block 0 (old block)



Block M (new block)

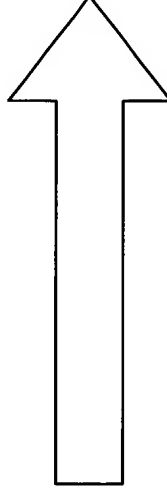


PRIOR ART
FIG. 1D

Block 0(old block)

Page0
Page1
Page2
Page3
Page4
• • •
PageN-1
PageN

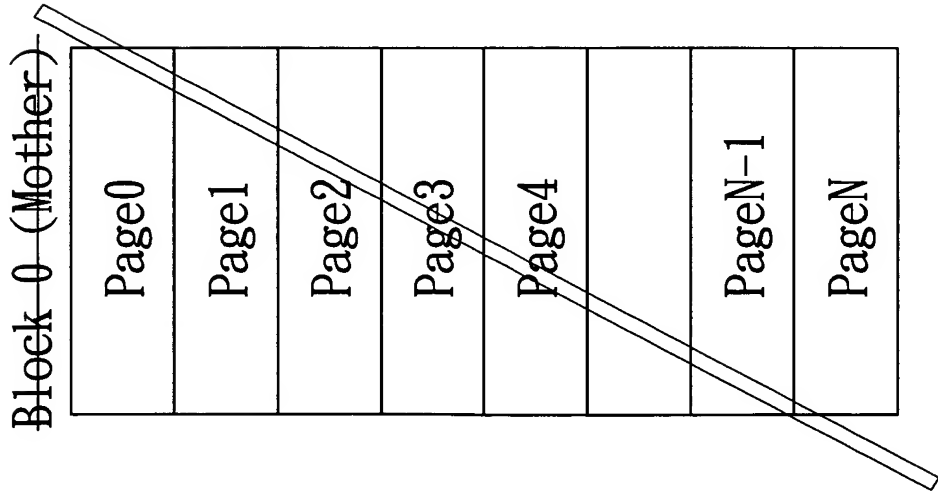
Controller transfers the block
below page4 from the old block
to the new block.



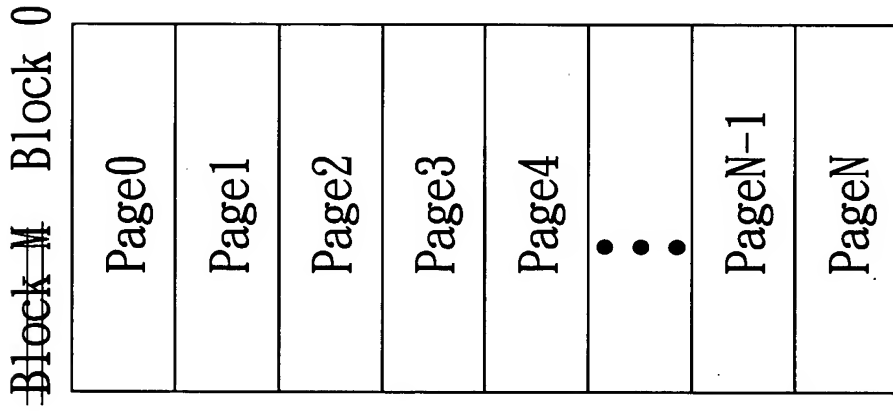
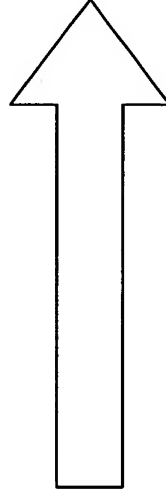
Block M(new block)

Page0
Page1
Page2
Page3
Page4
• • •
PageN-1
PageN

PRIOR ART
FIG. 1E



Controller erases the old block
and allow the new block replace
the old block 0.



PRIOR ART
FIG. 1F

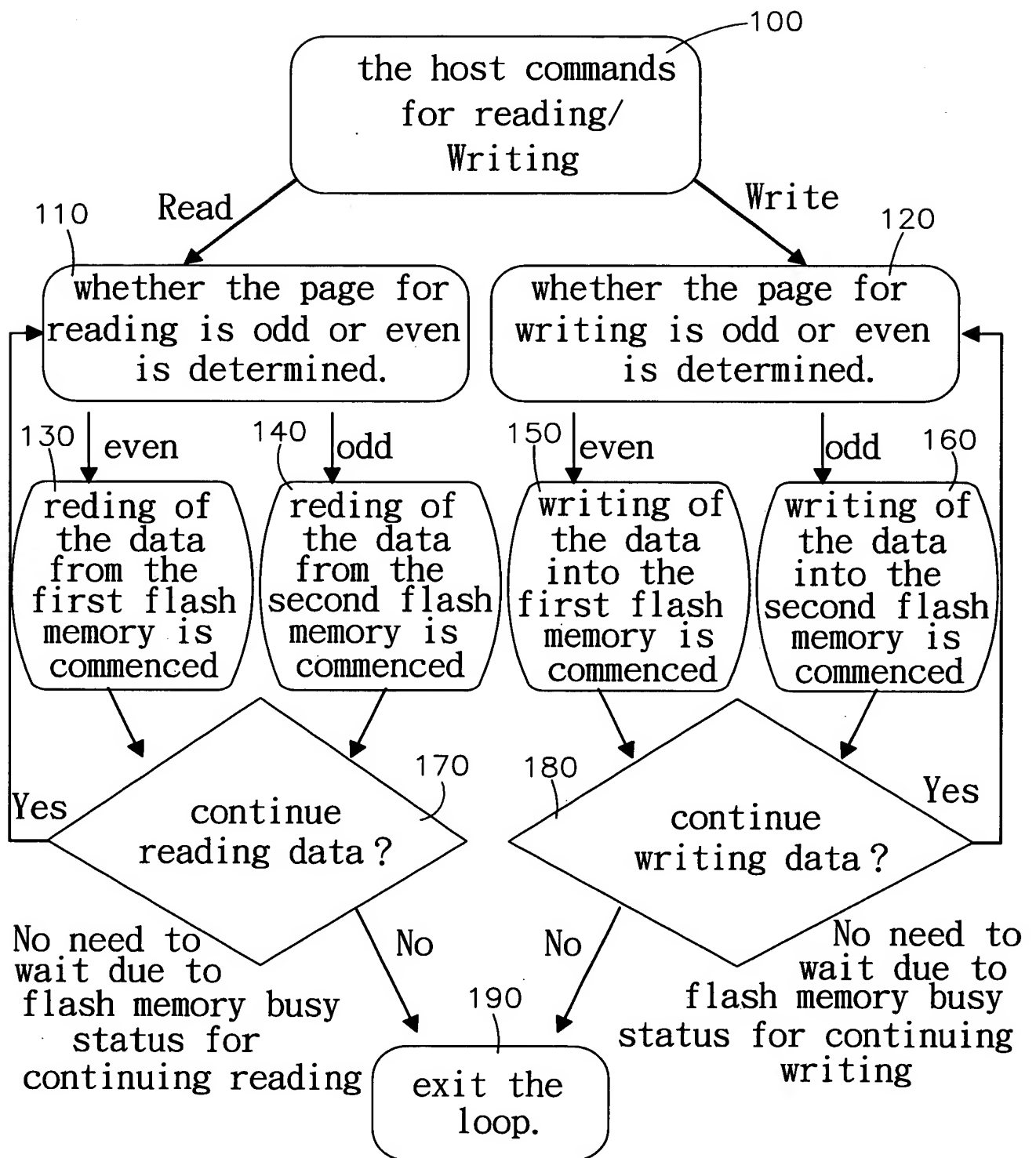


FIG.2

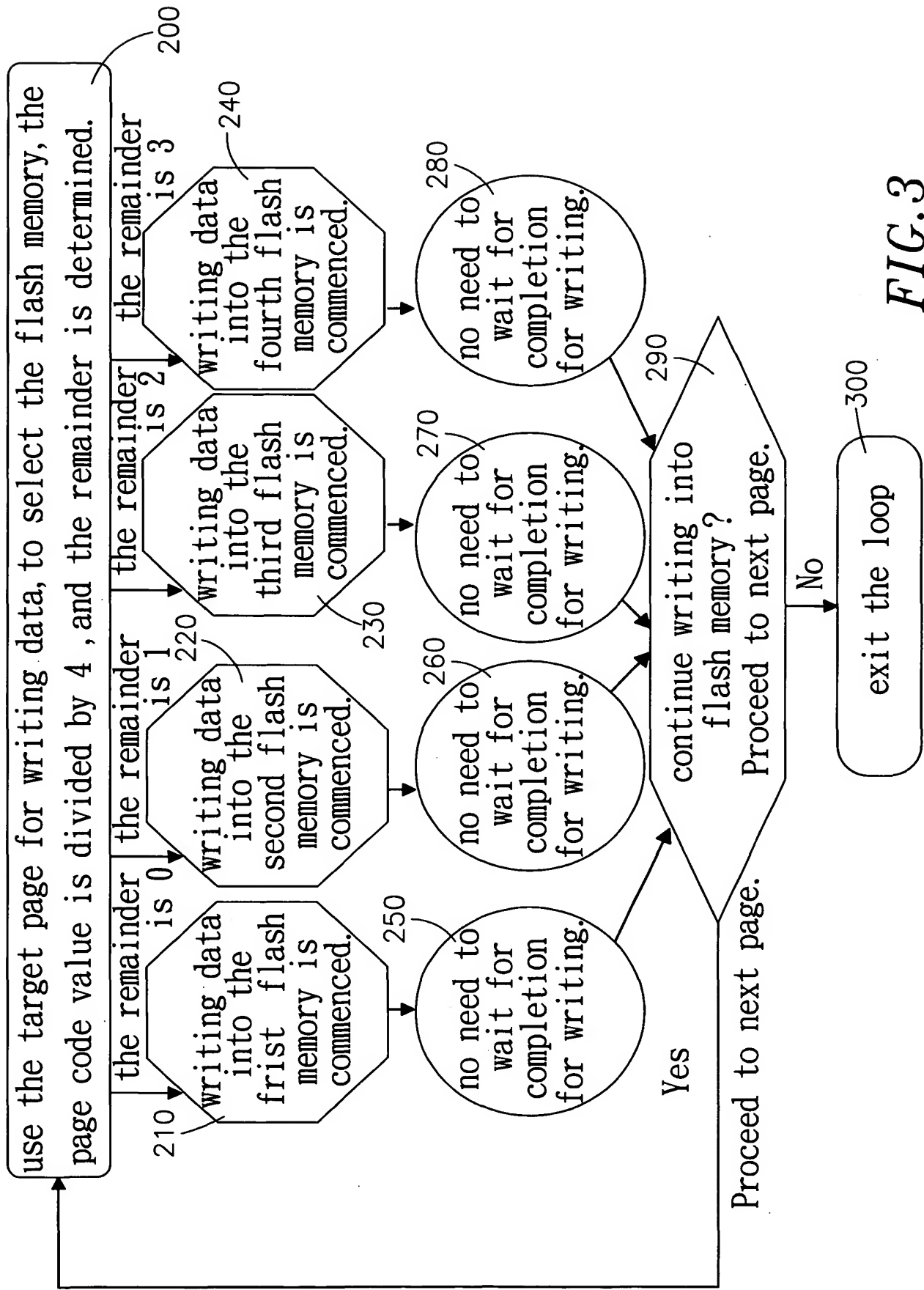


FIG. 3

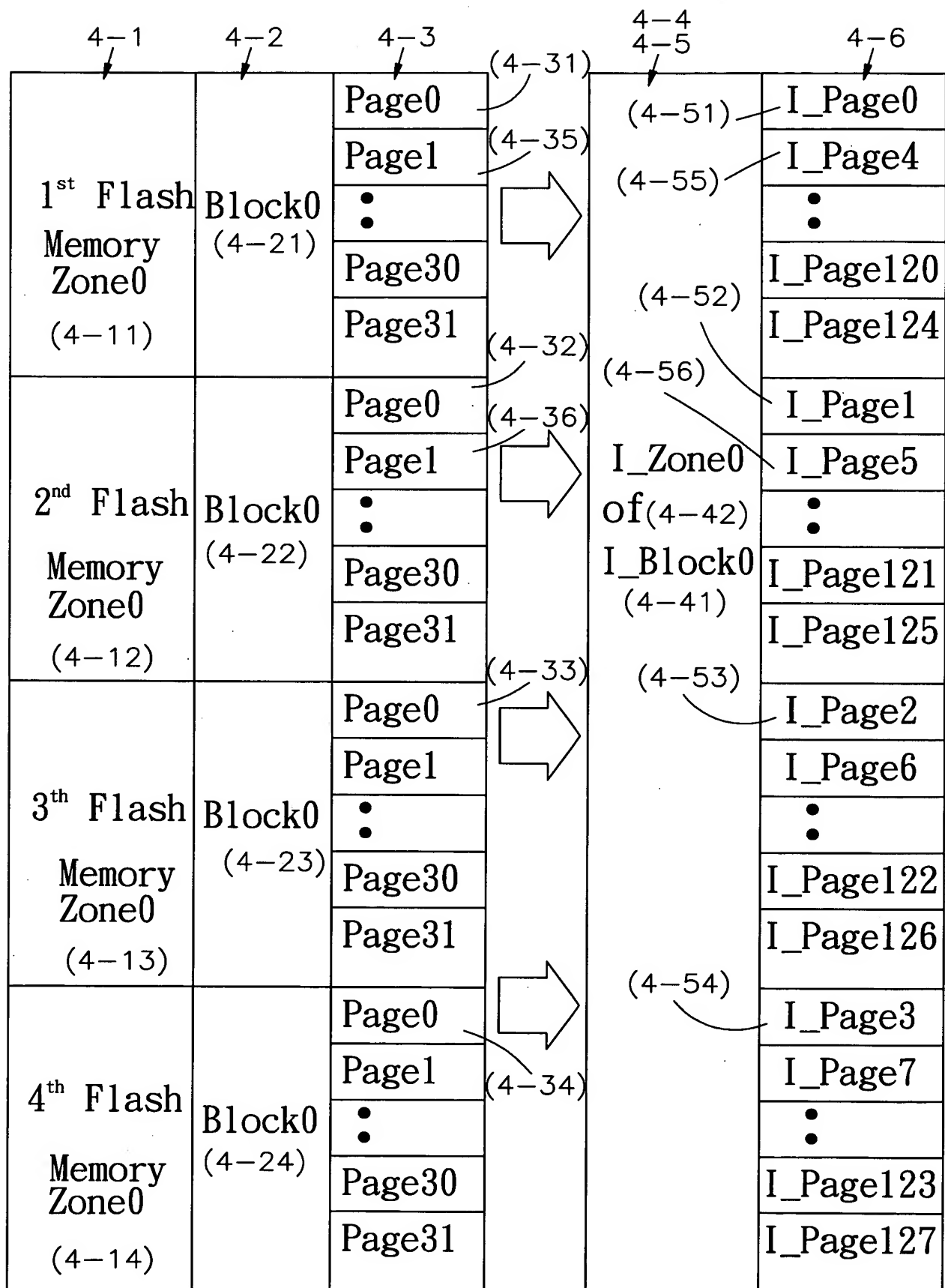


FIG. 4

<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="text-align: center;"> $5-1$ I_Zone0 </div> <div style="text-align: center;"> $5-2$ I_Zone1 </div> <div style="text-align: center;"> $5-3$ I_Zone2 </div> <div style="text-align: center;"> $5-4$ I_Zone3 </div> </div>			
I_Block0	I_Block0	I_Block0	I_Block0
I_Block1	I_Block1	I_Block1	I_Block1
I_Block2	I_Block2	I_Block2	I_Block2
I_Block3	I_Block3	I_Block3	I_Block3
I_Block4	I_Block4	I_Block4	I_Block4
I_Block5	I_Block5	I_Block5	I_Block5
I_Block6	I_Block6	I_Block6	I_Block6
I_Block7	I_Block7	I_Block7	I_Block7
⋮	⋮	⋮	⋮
I_Block1016	I_Block1016	I_Block1016	I_Block1016
I_Block1017	I_Block1017	I_Block1017	I_Block1017
I_Block1018	I_Block1018	I_Block1018	I_Block1018
I_Block1019	I_Block1019	I_Block1019	I_Block1019
I_Block1020	I_Block1020	I_Block1020	I_Block1020
I_Block1021	I_Block1021	I_Block1021	I_Block1021
I_Block1022	I_Block1022	I_Block1022	I_Block1022
I_Block1023	I_Block1023	I_Block1023	I_Block1023

FIG. 5

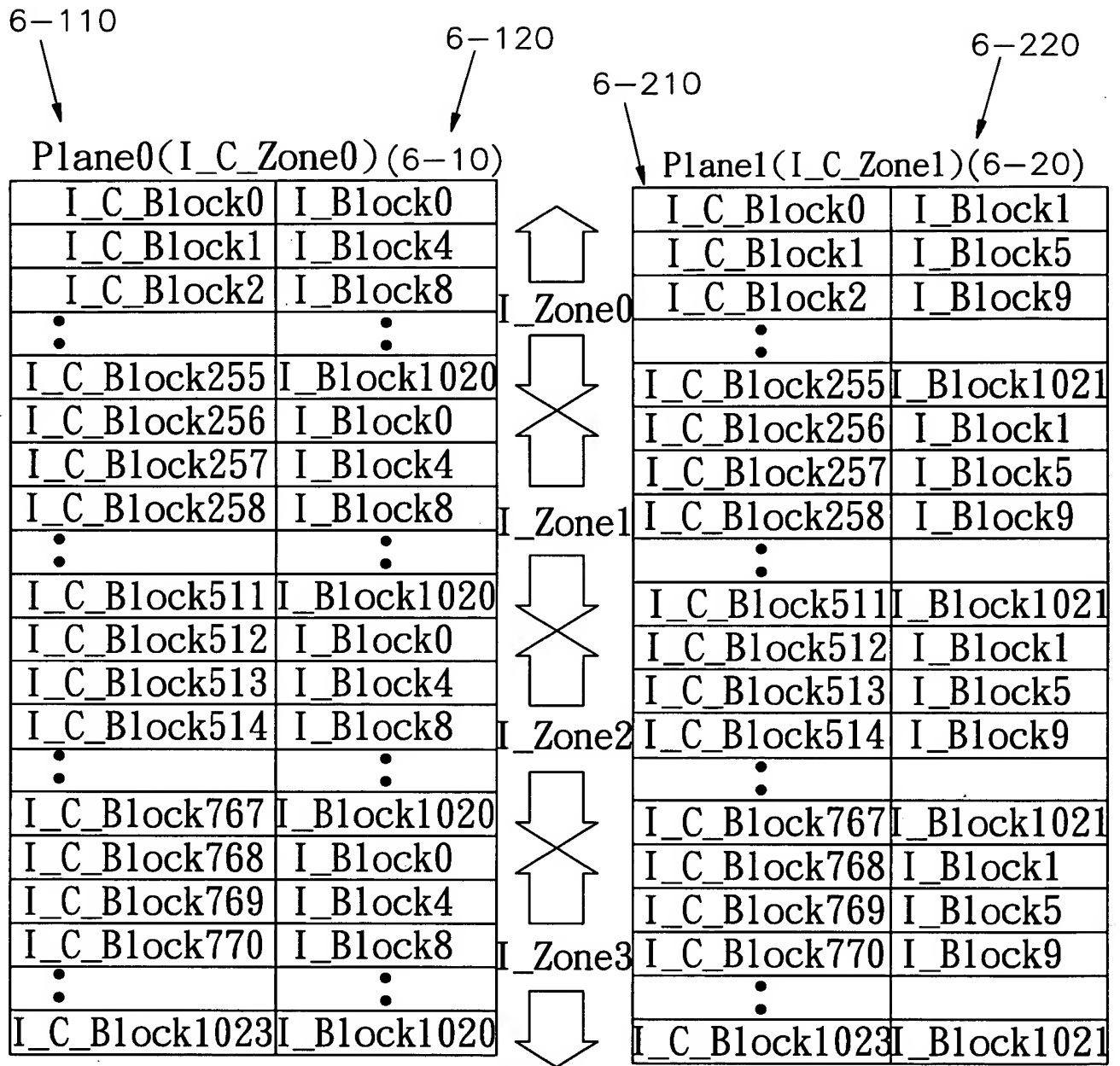


FIG. 6A

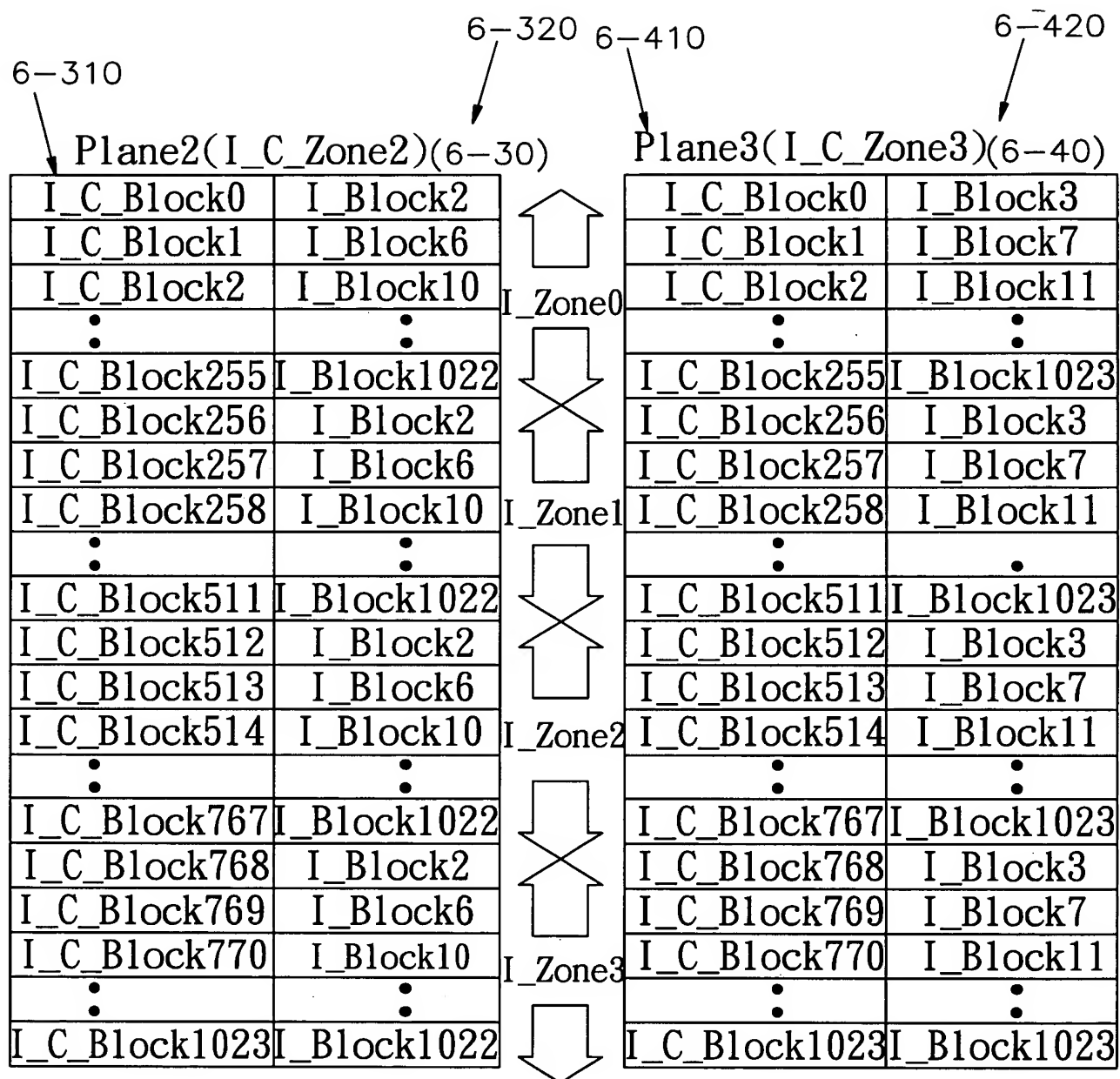


FIG. 6B

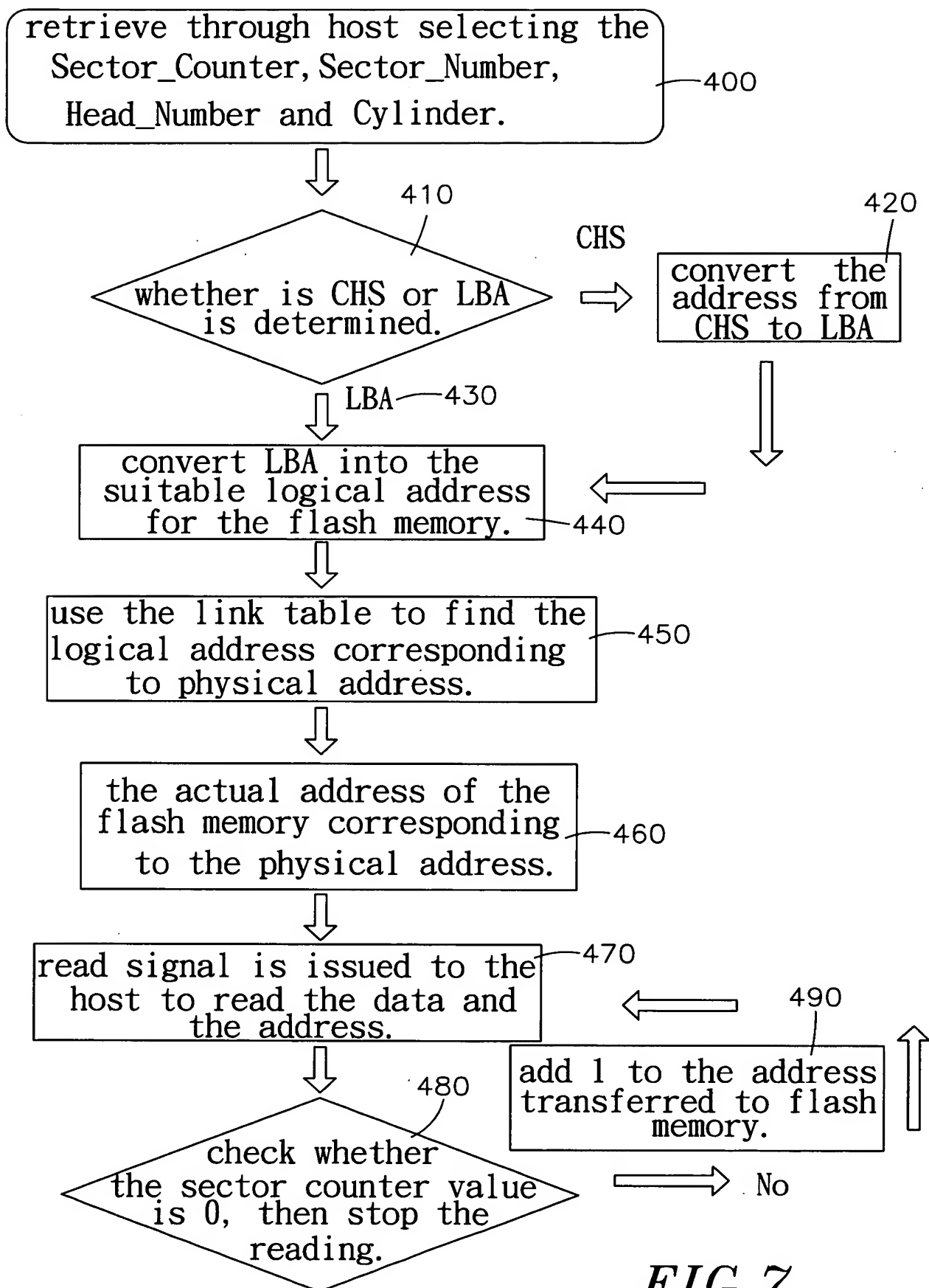


FIG. 7

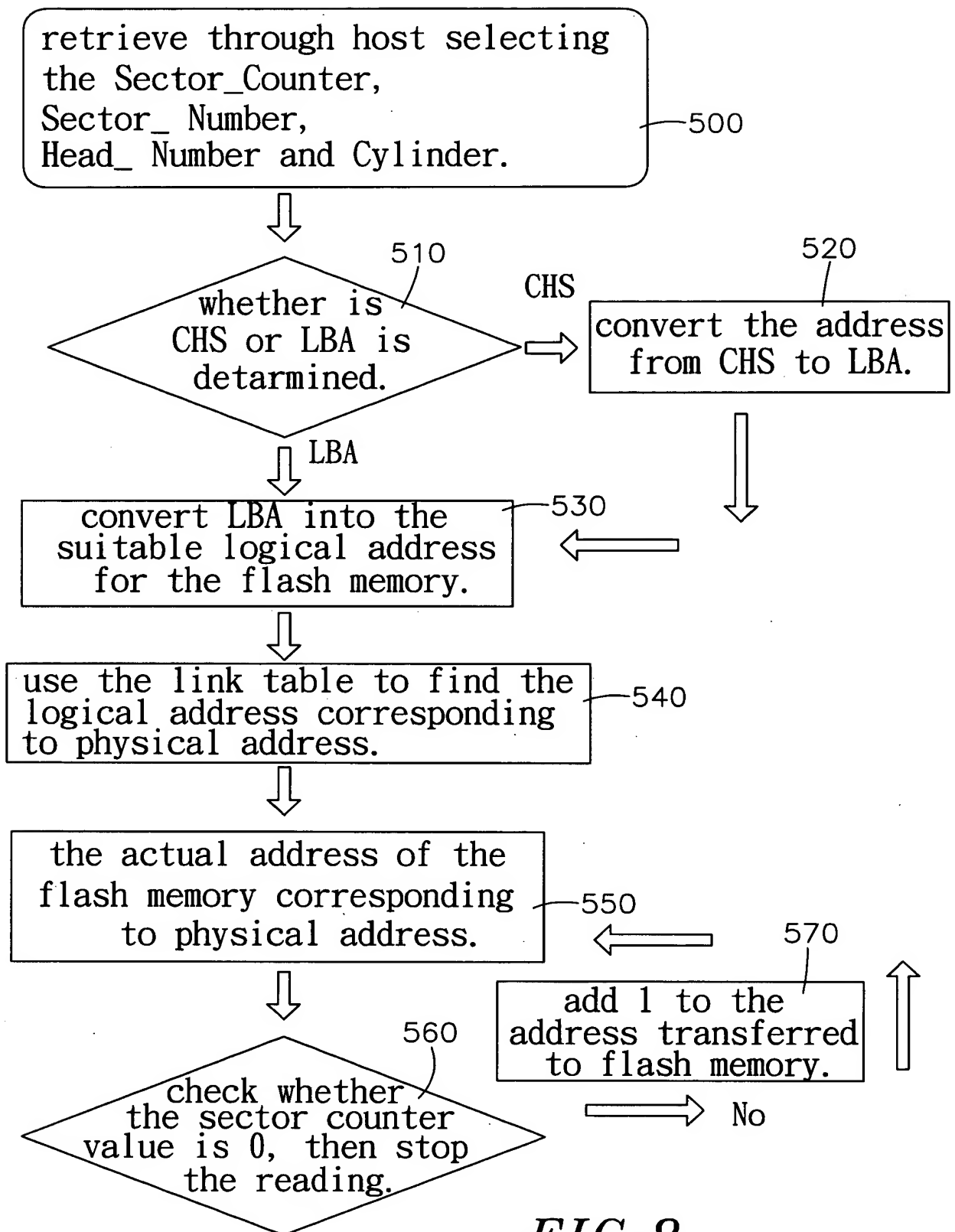


FIG. 8